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Indian Standard

**SPECIFICATION FOR
PROOFED COTTON DUCK GLAND PACKING**

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BUREAU OF INDIAN STANDARDS

MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Indian Standard

SPECIFICATION FOR PROOFED COTTON DUCK GLAND PACKING

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Indian Standard

SPECIFICATION FOR PROOFED COTTON DUCK GLAND PACKING

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 19 June 1968, after the draft finalized by the Packings and Gaskets Sectional Committee had been approved by the Mechanical Engineering Division Council.

0.2 Gland packings are used to contain fluids, gases and slurries under extreme pressure and temperatures, abrasives and other difficult conditions. This standard relates to proofed cotton duck gland packing. The requirements of other types of packing, that is, asbestos gland packing, jute and hemp or flax packing, are covered in separate standards.

0.3 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard deals with the requirements and methods of tests for proofed cotton duck gland packing used for hydraulic services.

2. MATERIAL

2.1 The packing shall consist of layers of friction cotton fabric with top and bottom cover of rubber. Natural rubber, synthetic rubber or a mixture of the two may be used.

3. DIMENSIONS

3.1 The preferred thickness of the packing shall be 2, 3, 4, 5, 6, 7, 8, 10, 12, 14, 15, 16, 18, 20, 22, 25, 30, 32, 35, 38, 40, 42, 45, 48 and 50 millimetres. Packing of other dimensions may be supplied subject to an agreement between the purchaser and the manufacturer.

*Rules for rounding off numerical values (*revised*).

3.2 The maximum permissible variations in dimensions shall be ± 0.5 mm for sizes up to and including 10 mm and ± 1 mm for sizes above 10 mm.

4. CONSTRUCTION

4.1 Slab stock shall be built of layers of frictioned cotton fabric laid on a bias at 45° and in alternate directions, each ply overlapping the butted joint of the adjacent ply. There shall be at least one layer of frictioned fabric for each 2 mm thickness. The top and bottom layers shall be of natural rubber, synthetic rubber or a mixture of the two.

4.2 The surface of the packing shall be smooth and it shall not have torn out threads.

4.3 The packing shall be coiled into spirals with the edges of the laminations forming the inside and outside surfaces and vulcanized. The inside coil diameter shall not be less than four times nor more than six times the thickness of the finished packing, the cross-section being square.

4.4 Lubrication — The packing shall be lubricated by mineral oil and graphited.

5. WORKMANSHIP

5.1 The packing shall show no evidence of poor workmanship.

6. SAMPLING

6.1 Lot — The quantity of coils of packing of the same size and of one definite quality, delivered to one buyer against one despatch note shall constitute a lot.

6.2 The conformity of a lot to the requirements of this standard shall be determined on the basis of the tests carried out on the samples selected from the lot.

6.3 Unless otherwise agreed to between the manufacturer and the purchaser, the number of coils to be selected at random from a lot shall be in accordance with col 1 and 2 of Table 1.

6.4 The coils selected according to 6.3 shall be inspected for construction, workmanship and dimensions. If the number of coils found not in conformity with the specified requirements, is less than or equal to the corresponding number given in col 3 of Table 1, the lot shall be declared conforming to the requirements of visual and dimensional characteristics.

6.5 In case of those lots which have been found satisfactory according to 6.4, a number of coils equal to the sample size given in col 4 of

Table 1 shall be selected from those coils tested according to 6.4. The specimens cut from these coils shall be subjected to tests given in 7.2, 7.3 and 7.4. The lot shall be declared conforming to the requirements of this specification if all the coils satisfy the relevant requirements.

TABLE 1 SAMPLE SIZE AND CRITERIA FOR CONFORMITY

(Clauses 6.3, 6.4, 6.5 and 7.1)

No. of Coils in the Lot	For Visual and Dimensional Characteristics		Sample Size for Other Characteristics
	Sample Size	Permissible No. of Defectives	
(1)	(2)	(3)	(4)
Up to 100	8	0	3
101 „ 300	13	1	4
301 „ 500	20	1	5
501 „ 1 000	32	2	6
1 001 and above	50	3	7

7. TESTS

7.1 Visual and Dimensional Inspection — Each coil selected in accordance with col 2 of Table 1 shall be inspected for the construction, workmanship and dimensions. The dimensions shall be measured to an accuracy of 0.1 mm with a slide-gauge at three different places in two perpendicular directions. The mean of the six measurements thus made shall be within the variation specified at 3.2.

7.2 Flexibility — A suitable length of packing with the cover stock against a rod of diameter four times the thickness and bent through 180° shall not crack or separate into layers.

7.3 Cotton Fabric — The fabric used for the packing shall weigh not less than 918 grams per square metre.

7.4 Friction Compound — There shall be neither ply separation nor material hardening of the compound when a piece of finished packing is exposed to saturated steam at a pressure of 25 kgf/cm² for four hours.

8. MARKING

8.1 Each coil of packing shall be marked with the manufacturer's name or trade-mark and the dimensions of the packing.

8.1.1 Packing coils may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

9. PACKAGING

9.1 Packaging shall be as agreed between the manufacturer and the purchaser.

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